

Abstract Submitted
for the TSF11 Meeting of
The American Physical Society

STM Studies of Mn₁₂-Ph on Highly Oriented Pyrolytic Graphite

K. REAVES, WPI-AIMR, Tohoku University, Japan and Department of Physics and Astronomy, Texas A&M University, K. KIM, Y.G. KIM, K. ITAYA, K. IWAYA, T. HITOSUGI, WPI-AIMR, Tohoku University, Japan, H. ZHAO, K.R. DUNBAR, Department of Chemistry, Texas A&M University, W. TEIZER, WPI-AIMR, Tohoku University, Japan and Department of Physics and Astronomy, Texas A&M University — Mn₁₂O₁₂(C₆H₅COO)₁₆ (referred to as Mn₁₂-Ph) has been deposited onto Highly Oriented Pyrolytic Graphite (HOPG) which was then observed via Scanning Tunneling Microscopy (STM). Mn₁₂-Ph displays tunneling of quantized magnetization below 3K. In other Mn₁₂ ligand variants this magnetic phenomenon can alter the electronic behavior of the molecule, making it a good candidate for a molecular logic gate. At room temperature, film formation was studied to optimize samples for subsequent low temperature studies. At 4.2K isolated objects were observed on the surface clearly distinct from the graphite lattice underneath. Spectroscopic data indicates a bias voltage dependence thought to be associated with metallic-core molecules.

Kelley Reaves
Department of Physics and Astronomy, Texas A&M University,
College Station, TX 77843-4242

Date submitted: 12 Sep 2011

Electronic form version 1.4